US Army Corps of Engineers®
Portland District

Information Paper

Date: November 1998

http://www.nwp.usace.army.mil/pm/projects/crnci

Columbia River Channel Improvement Study—Comparison of Least Cost and Sponsor Preferred Disposal Plans

The Feasibility Study/EIS presents the Least Cost and the Sponsor Preferred disposal plans for the 43-foot channel. The two plans are similar. Both rely on upland, inwater, and ocean disposal, and minimize the use of shoreline disposal. The plans provide disposal capacity adequate for construction and 20 years of maintenance dredging. Because of the uncertainties in maintenance dredging volumes, land use changes, environmental regulations and technical advances, only a general concept is provided for disposal during years 21 to 50 of the proposed project.

Disposal Plan Development

The first step in the development of the disposal plans was to identify all the potential upland, inwater and ocean disposal sites. Environmental and engineering screening criteria were then used to refine that long list of potential sites.

The environmental criteria included:

- ESA critical habitat
- Near bald eagle sites
- Productive shallow-water habitat
- Beach nourishment sites not currently cleared, or studied and determined to be productive for benthic invertebrates
- Impact to wetlands
- No disposal inside state/federal wildlife refuges or management areas (except currently used sites)

The engineering criteria included:

- Insufficient capacity available/required
- Disposal site not in proximity to dredging site
- Placement of material results in re-handling or creation of a shoal
- Incompatible with future development/land use
- Insufficient volume for pipeline use of upland site
- High costs

The Corps took the sites that passed the environmental and engineering screening, and conducted a cost comparison analysis. The least costly combination of disposal sites was then assembled into a disposal plan. The sponsors, resource agencies, and public then reviewed that plan. Based on the review comments, the plan was adjusted to produce the proposed Least Cost disposal plan.

The Sponsors applied the following guidelines during the selection of their Preferred Plan:

- Utilize Columbia River sand for port purposes and other beneficial uses
- Substitute transportation costs for environmental costs
- Minimize acquisition costs and enhance feasibility by avoiding controversial sites

The sponsors were willing to incur some additional project cost to satisfy the local guidelines.

- more -

Least Cost Disposal Plan

The Least Cost disposal plan utilizes the 31 upland disposal sites for construction and maintenance during the first 20 years of the project. Those sites have a total area of 1,897 acres. Fifteen of the 18 upland sites in the no action alternative are also included in the least cost alternative. Eight of the proposed upland sites have not been used for disposal and the remaining 23 were all used for disposal in the past. The Least Cost disposal plan would result in the direct loss of 398 acres of agricultural lands, 66 acres of riparian habitat, and 38 acres of wetland habitat.

The Least Cost disposal alternative involves a variety of in-water disposal actions during the first 20 years. There would be two beach nourishment sites (O-23.5 and O-86.2), an in-water fill at Columbia rivermiles 25 to 27, and flowlane disposal along the length of the navigation channel. The in-water fill would be part of a proposed ecosystem restoration project to restore shallow water areas between Miler Sands and Pillar Rock islands.

Flowlane disposal would be used over the 50-year life of the project. Flowlane disposal would generally occur in water depths of 50 to 65 feet. There would be several exceptions to the general flowlane criteria, however. Flowlane disposal could occur in two areas with depths of 35 to 65 feet and in five areas over 65 feet deep. Inwater disposal would include 2 million cubic yards of construction material and 21 mcy of maintenance material over 20 years.

Sediment chemical test results from 1997 indicated some of the Willamette River sediments to be dredged during construction exceeded screening levels for one or more contaminates and may not be suitable for unconfined inwater disposal. Clean sediments from the Willamette River would be disposed of in unconfined inwater sites in the Columbia River near CRM 101 and in the Willamette River near Willamette rivermiles 4.5 and 9.6. Any material unsuitable for unconfined inwater disposal would be managed appropriately; for example, placed in the proposed Willamette River sites and then capped with clean material. Inwater disposal from the Willamette River would involve 1 mcy of construction material and 3 mcy of maintenance material over 20 years.

During construction, 7 mcy of material would be disposed of in an ocean disposal site. An additional 4 mcy of maintenance material would be placed there over 20 years.

Sponsor's Preferred Disposal Plan

The inwater and ocean disposal sites are the same in the Sponsor's Preferred and the Least Cost plans. The sponsor's plan trades some of the Least Cost plan upland sites that would require mitigation for more costly sites that provide material for commercial/industrial uses or do not require mitigation. Four of the sponsor's alternate sites are on or near Port land at Vancouver, St. Helens, Kalama and Longview, and two are at active sand and gravel mining operations.

The sponsor's disposal alternative uses 29 upland sites totaling 1,755 acres. Fifteen of the 18 upland sites in the no action alternative are also included in the sponsor disposal alternative. Three of the proposed upland sites have not been used for disposal and the remaining 26 were all used for disposal in the past. The Sponsor's plan results in the direct loss of 193 acres of agricultural lands, 73 acres of riparian habitat, and 30 acres of wetland habitat.